

Please amend the claims according to the following listing of claims:

1. (Previously Amended) A method of making an arc tube chamber intermediate tubular end portions comprising the steps of:
 - (a) providing a tube of vitreous material;
 - (b) heating a portion of the tube sufficiently to soften it in a predetermined area;
 - (c) axially compressing the tube to force the softened material in the heated area radially inward and outward around the circumference of the tube to thereby thicken the tube wall in the heated area;
 - (d) repeating step (b) and step (c) in areas of the tube proximate to the previously thickened tube wall at least one additional time to thereby thicken the wall of the tube over an axial distance approximating the length of the desired chamber;
 - (e) heating the thickened wall area of the tube;
 - (f) positioning a mold having a surface defining a chamber cavity of a desired shape over the heated thickened wall area, the chamber cavity defining surface having a portion for defining a canoe-shaped portion of the arc tube chamber;
 - (g) internally pressurizing the tube to expand the heated thickened area of the tube against the internal wall of the mold cavity to thereby form a chamber in the tube; and
 - (h) removing the mold from the chamber to thereby provide an arc tube chamber intermediate open tubular end portions.

2. (Previously Amended) The method of Claim 1 wherein the ratio of the diameter of the tube to the maximum vertical height of the mold cavity is between about 7/10 and about 7/30 to thereby reduce the amount of heat required to seal the end portion by pinch seal

3. (Previously Amended) The method of Claim 1 wherein the ratio of the diameter of the tube to the maximum horizontal width of the mold cavity is between about 7/10 and about 7/30 to thereby reduce the amount of heat required to seal the end portion by pinch seal.

4. (Original) The method of Claim 1 wherein the ratio of the maximum vertical height of the mold cavity to the maximum horizontal width of mold cavity is approximately one.

5. (Original) The method of Claim 1 wherein the two longitudinal halves of the mold cavity are symmetrical.

6. (Original) The method of Claim 1 wherein the mold cavity is symmetrical in vertical cross-section throughout the length thereof.

7. (Cancelled)

8. (Previously Amended) The method of Claim 1 wherein the tube is positioned so that its axis is substantially horizontal and the mold cavity is positioned with the canoe-shaped portion defining surface up in step (f).

9. (Original) The method of Claim 1 wherein the mold cavity is horizontally split for positioning in step (f).

10. (Previously Amended) The method of Claim 9 wherein the mold cavity is positioned with the canoe-shaped portion defining surface up in step (f).

11. (Previously Amended) The method of Claim 1 wherein the canoe-shaped portion defining surface of the mold is flattened in an area between about 20 and about 80 percent of the maximum width of the mold cavity.

12. (Previously Amended) The method of Claim 1 wherein the canoe-shaped portion defining surface of the mold is flattened in an area between about 20 and about 80 percent of the maximum length of the mold cavity.

13. (Previously Amended) The method of Claim 12 wherein the canoe-shaped portion defining surface of the mold is flattened over a distance between about 50 and about 60 percent of the maximum length of the mold cavity.

14. (Previously Amended) The method of Claim 1 wherein a portion of the mold cavity opposite the canoe-shaped portion defining surface is arched.

15. (Original) The method of Claim 1 wherein the mold cavity is widest at the longitudinal center of the cavity and progressively more narrow towards the ends of the chamber.

16. (Original) The method of Claim 1 wherein the mold cavity is tallest at the longitudinal center of the cavity and progressively more narrow towards the ends of the chamber.

17. (Original) The method of Claim 1 comprising the further steps of:

(i) positioning an in-lead connector, foil and electrode assembly within each open tubular ends;

- (j) heating the open tubular ends; and
- (k) pinch sealing the open tubular ends over a portion of the assembly to thereby form an arc tube.

18. (Previously Amended) A mold for forming a bulbous arc tube chamber intermediate tubular end portions in a formed body arc tube, said mold defining a cavity having a flattened portion extending over 50% or more of the maximum length of the cavity.

19. (Previously Amended) A method of making an arc tube chamber intermediate tubular end portions comprising the steps of:

- (a) providing a tube of vitreous material;
- (b) heating a portion of the tube sufficiently to soften it in a predetermined area;
- (c) axially compressing the tube to force the softened material in the heated area radially inward and outward around the circumference of the tube to thereby thicken the tube wall in the heated area;
- (d) repeating step (b) and step (c) in areas of the tube proximate to the previously thickened tube wall at least one additional time to thereby thicken the wall of the tube over an axial distance approximating the length of the desired chamber;
- (e) heating the thickened wall area of the tube;
- (f) positioning a mold having an elongated chamber cavity over the heated thickened wall area, the chamber cavity having a flattened portion extending between about 50% and about 80 % of the maximum length of the cavity;

(g) internally pressurizing the tube to expand the heated thickened area of the tube against the internal wall of the mold cavity to thereby form a chamber in the tube; and

(h) removing the mold from the chamber to thereby provide an arc tube chamber intermediate open tubular end portions.

20. (Previously Presented) The method of Claim 19 wherein the chamber cavity is symmetrical in at least one longitudinal cross-section.

21. (Previously Presented) The method of Claim 20 wherein a symmetrical cross-section is perpendicular to an asymmetrical cross-section.

22. (Cancelled)

23. (Currently Amended) The method of Claim ~~22~~ 19 wherein the flattened portion of said mold cavity is positioned in the uppermost area of said mold cavity.

24. (Currently Amended) The method of Claim ~~22~~ 19 wherein the flattened portion of said mold cavity is positioned in the lowermost area of said mold cavity.

25. (Currently Amended) The method of Claim ~~22~~ 19 wherein the mold is split in two portions.

26. (Previously Amended) The method of Claim 25 wherein only one portion of the mold defines the flattened portion of the mold cavity.

27. (Previously Amended) A mold for forming an elongated bulbous chamber intermediate tubular end portions in an arc tube, said mold having a surface defining a cavity for molding a canoe-shaped portion of the chamber.

28. (Previously Presented) The mold of Claim 27 being symmetrical in at least one longitudinal cross-section.

29. (Previously Presented) The mold of Claim 28 wherein a symmetrical longitudinal cross-section is perpendicular to an asymmetrical longitudinal cross-section.

30. (Previously Amended) The mold of Claim 27 wherein said surface includes a flattened portion.

31. (Previously Amended) The mold of Claim 27 wherein the flattened portion is slightly arcuate across the width of the cavity.

32. (Previously Amended) The method of Claim 30 wherein the flattened portion is slightly v-shaped across the width of the cavity.

33. (Previously Presented) The method of Claim 18 wherein said mold defines a cavity having a flattened portion extending between about 50% and about 80% of the maximum length of the cavity.

34. (Previously Presented) The method of Claim 1 wherein the lateral cross-section of the cavity at its widest point includes a generally circular portion and a generally straight portion, the circular portion comprising an arc of between about 220 degrees and about 340 degrees.

35. (Previously Presented) The method of Claim 34 wherein the circular portion comprises an arc of between about 240 degrees and 300 degrees.

36. (Previously Presented) A method of making an arc tube having a bulbous chamber disposed between tubular end portions comprising the steps of:

providing a tube of vitreous material; and

forming a bulbous chamber in the tube having a lateral cross-section at the central portion thereof formed by first and second circular portions, the ratio the radius of curvature of the first portion to the radius of curvature of the second portion being between about 1.5 and about 5.

37. (Previously Presented) A method of making an arc tube having a bulbous chamber disposed between tubular end portions comprising the steps of:

providing a tube of vitreous material; and

forming a bulbous chamber in the tube having a lateral cross-section at the central portion thereof formed by a circular arc of between about 220 degrees and 340 degrees and a non-curved portion.

38. (Previously Presented) The method of Claim 37 wherein the non-curved portion is slightly v-shaped.

39. (Previously Presented) A method of making a horizontally burning HID arc tube comprising the steps of:

providing a tube of vitreous material; and

forming a light emitting chamber in said tube having an upper portion longitudinally conforming generally to the shape of the arc to be drawn in the chamber and a canoe-shaped lower portion.

40. (Previously Presented) A method of making an arc tube for a horizontally burning HID arc tube comprising the steps of:

(a) providing a tube of vitreous material;

- (b) heating a portion of the tube sufficiently to soften it in a predetermined area;
- (c) axially compressing the tube to force the softened material in the heated area radially inward and outward around the circumference of the tube to thereby thicken the tube wall in the heated area;
- (d) repeating step (b) and step (c) in areas of the tube proximate to the previously thickened tube wall at least one additional time to thereby thicken the wall of the tube over an axial distance approximating the length of the desired chamber;
- (e) heating the thickened wall area of the tube;
- (f) positioning a mold having a surface defining a cavity for molding a chamber having a portion longitudinally conforming generally to the shape of the arc to be drawn in the chamber opposite of a canoe-shaped portion;
- (g) internally pressurizing the tube to expand the heated thickened area of the tube against the internal wall of the mold cavity to thereby form a chamber in the tube; and
- (h) removing the mold from the chamber to thereby provide an arc tube chamber intermediate open tubular end portions.

41. (Previously Presented) A method of making an arc tube for an HID lamp comprising the steps of:

providing a tube of vitreous material; and

forming a bulbous chamber intermediate the end portions of the tube, the chamber having a flattened portion extending over 50% or more of the maximum length of the chamber.

42. (Previously Presented) The method of Claim 41 wherein the flattened portion extends between about 50% and about 80% of the maximum length of the chamber.